

**REMARKS**

Reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

The objection to claim 1 has been corrected by providing a space between the word “thefood”.

In claim 6, the “t” in the word “the” at the beginning of claim 6 has been capitalized.

Accordingly, the claim objections have been overcome and should be withdrawn.

Claim 9, 12, 20 and 24 stand rejected under 35 USC § 112, second paragraph, a being indefinite.

The indefiniteness rejection with respect to claim 9 is rendered moot in view of its cancellation herein.

In claim 12, the “reducing sugar content” has been limited to “less than 0.25 wt. %.” The same change is also made in claim 20.

In claim 24, the concentration of the enzyme units have been limited to the range of  $10^2$  to  $10^5$ .

In view of the foregoing amendments, it is believed that the § 112 rejection has been overcome and, accordingly, its withdrawal is respectfully solicited.

In summary, claims 3 – 5, 7 – 11, 15, 18 and 22 - 26 have been cancelled, without prejudice or disclaimer.

Claims 1, 6, 12, 13, 20 and 24 have been amended. The amendments are fully supported in the as-filed specification.

New claim 29 has been added. It is supported in the as-filed specification.

The claims pending before the Examiner are 1, 2, 6, 12, 13, 16, 17, 19 – 21 and 27 – 29.

Claims 1, 3, 7, 8, 10, 13 – 17, 26 and 27 stand rejected under 35 USC 102(e) as being anticipated by Howie et al. (US Published Application 2004/0265432). This rejection is respectfully traversed.

Howie et al. disclose the use of an immobilized enzyme glucose-oxidase for reducing the level of glucose and therewith acrylamide formation in a food product. It is respectfully submitted that the amendments to independent claims 1 and 13 overcome this rejection under § 102(e). These claims, as well as the claims which depend therefrom, serve to distinguish over the reference since the claim recitation which was directed to withdrawing reducing sugars by means of enzymes has now been cancelled.

Claims 1 and 13 are limited to the use of micro-organisms to withdraw reducing sugars, as well as the claims depending therefrom, and now serve to distinguish over the teachings of Howie et al. Furthermore, as indicated by the Examiner in item 46, at page 10 of the Office Action, with respect to dependent claims 4 and 23, there is no disclosure in the Howie reference of micro-organisms capable of converting glucose. In view of the foregoing, it is respectfully submitted that the rejection under § 102(e) has been overcome and should be withdrawn.

Claims 13, 14, 16 and 17 stand rejected under 35 USC § 102(e) as being anticipated by Zyzak (US Published Application 2004/0058046). This rejection is respectfully traversed.

The Zyzak et al. reference disclose enzyme treatment, suggesting glucose oxidase, pyranose oxidase and aldose dehydrogenase. Since independent process claim 1 and 13 and the claims dependent thereon no longer recite enzyme-treatment but are limited to the use of micro-organisms to withdraw the reducing sugars, it is respectfully submitted that the claims distinguish over the Zyzak et al. reference. Accordingly, the rejection under § 102(e) should be withdrawn for failure to establish a *prima facie* case of anticipation.

Claims 9 and 24 stand rejected under 35 USC § 103(a) as being unpatentable over Howie et al. (US 2004/0265432) as applied to claims 1, 3, 7, 8 above. Since claims 9 and 24 have been cancelled herewith without prejudice or disclaimer, the rejection herein is rendered moot.

Claims 19 and 21 stand rejected under 35 USC § 103(a) as being unpatentable over Tricoit et al. (US 2004/0115321). This rejection is respectfully traversed.

The Tricoit reference teaches the addition of antioxidant to the food product after blanching, for example, by chilling the blanched potatoes by soaking them in a cold solution containing salts, SAPP and/or an antioxidant. Both during blanching and chilling there is no teaching of any steps being taken to prevent other valuable components from leading out into the water.

The blanched potato product recited in claim 19 recites a reducing sugar content of less than 0.25 wt. %. There is no teaching or suggestion provided in Tricoit which would direct one of ordinary skill in the art of the benefit to be realized from a blanched potato product having a reducing sugar content of less than 0.25 wt. %. Accordingly, claims 19 and 21 are deemed to distinguish over the teaching of Tricoit. The Examiner having failed to establish a *prima facie* case of obviousness should withdraw the rejection.

Claims 2, 22 and 25 stand rejected under 35 USC § 103(a) over Howie et al. as applied to claim 1 above in view of Arroqui et al. "Losses by Diffusion of Ascorbic Acid During Recycled Water Blanching of Potato Tissue" (2002) *Journal of Food Engineering*, 52, 25 – 30. This rejection is respectfully traversed.

Claims 2, 22 and 25 all depend ultimately from independent claim 1.

There is no teaching in the Howie reference of the withdrawal of both ***glucose and fructose*** using the microorganisms to which independent claim 1 is now limited. The Howie reference only discloses the withdrawal of ***glucose*** from a food product using ***enzymes*** which are capable of *producing or oxidizing glucose*.

The teaching of the Arroqui et al. reference does not serve to ameliorate or supplement the deficiency in the teaching of Howie et al. Accordingly, the rejection of claims 2, 22 and 25 under 35 USC § 103(a) has been overcome and should be withdrawn.

Claims 4 and 23 stand rejected under § 103(a) over Howie et al. as applied to claims 1 and 3 in view of Nitz (US 3,014,805). This rejection is respectfully traversed.

Claims 4 and 23 have been cancelled herein. This rejection is thus rendered moot.

Claims 5 and 6 stand rejected under § 103(a) over the combination of Howie et al. in view of Xu et al. (WO0178524). This rejection is respectfully traversed.

Since claim 5 has been cancelled herein, Applicants will only address the rejection to claim 6. The Howie et al. reference does not disclose the use of micro-organisms and, furthermore, does not teach the withdrawal of both glucose and fructose, which are both reducing sugars.

The Xu disclosure does not ameliorate this deficiency in the teaching of Howie since there is no disclosure in Xu of the use of micro-organisms. Rather Xu, teaches *the use of enzymes* which are obtained from micro-organisms. The enzymes which are disclosed in Xu are not derived from the micro-organisms which are claimed herein and, according to Xu, they *only convert glucose*. (In this regard, see page 2, lines 8 – 19 of the present application.) Accordingly, the rejection is deemed to have been overcome since the claims distinguish over the combination of references applied by the Examiner. Withdrawal of the rejection is accordingly respectfully solicited.

The rejection of claim 11 over Howie in view of Schoenrock (US 4,412,866) is rendered moot herein in view of its cancellation.

Claim 12 stands rejected under § 103(a) over Howie et al as applied to claim 1 above in view of Zyzak. This rejection is respectfully traversed.

The claims are deemed to distinguish over the combination of Howie and Zyzak, since neither reference provides the skilled person with the incentive to use microorganisms instead of immobilizing enzymes. Also, neither reference points the skilled person to “the fructose issues”, namely, how to simultaneously withdraw both fructose and glucose.

Both Howie and Zyzak are directed to withdrawing glucose from a food product using enzymes capable of reducing or oxidizing glucose. However, many food products, potatoes being an example, contain both glucose and fructose. In fact, in a potato, fructose and glucose are present in similar amounts. Since both reducing sugars contribute to the problems induced by reducing sugars, such as acrylamide formation, it is desirable to find a mechanism to withdraw both glucose and fructose. The teachings as provided in Howie and Zyzak are thus limited.

Applicants contribution to the art is to lower the detrimental effects of reducing sugars using specific microorganisms capable of converting glucose and fructose. In an experiment with potato blanching, water containing glucose and fructose, both in amounts of 0.7 g/l, it is now made feasible, by inoculating the blanching medium with the claimed microorganisms, to dilute the glucose and fructose levels within 48 hours up to 0.01 g/l, or even less. It is noted that the prior art methods taught by Howie and Zyzak do nothing to address or tackle the 0.7 g/l fructose present in the blanching medium. By the claimed invention, acrylamide formation is thus reduced significantly.

Accordingly, dependent claim 12 distinguishes over the combination of references. Accordingly, the rejection has been overcome and should be withdrawn.

Claim 18 stands rejected under § 103(a) over the combination of Howie et al. as applied to claim 17 above in view of Tricoit et al (US 2004/0115321). This rejection is respectfully traversed.

Amended independent claim 17 is directed to potato products that have been subjected to a blanching step using the recycling process of the present invention. In Zyzak, no action is taken during blanching to prevent valuable potato ingredients such as

sucrose, citric acid and potassium from leaching out [by diffusion] during the blanching process. As a result, the fried potato products of Zyzak are thus low in sucrose, citric acid and potassium.

At this point, the Examiner refers to Tricoit. This reference teaches to the addition of an antioxidant to the food product after blanching, for instance by chilling the blanched potatoes by soaking them in a cold solution containing salts, SAPP and/or an antioxidant. Both during blanching and chilling no steps are taken to prevent other valuable components from leaching out into the water. It is the inventors' contribution to the art to introduce a blanching step in which no valuable potato ingredients are lost which would otherwise diffuse into the blanching medium, and which could only [selectively] be re-introduced using additional but expensive steps such as are taught in Tricoit. The claimed process reflects in the resulting end product, which, for instance, differs from the artificially obtained high-potassium and high-citric acid blanched potato product in that it has an increased sucrose content.

Claims 20 and 28 stand rejected for obviousness under § 103(a) of the combination of Tricoit et al. in view of Zyzak et al. This rejection is respectfully traversed.

As argued in favour of the process claims, Howie (and Zyzak) do not teach the withdrawal of fructose. Since fructose and glucose are present in similar amounts, this already implies that the methods of Howie and Zyzak will not yield the results in terms of reducing sugar content as the present invention.

The rejection under § 103(a) has been overcome since the claims are deemed to distinguish over the combination of references. Withdrawal of the rejection is solicited.

Since the rejections under § 112, 102(e) and 103(a) have all been overcome by a preponderance of the evidence, their withdrawal is respectfully solicited since a *prima facie* case of obviousness or anticipation has not been established.

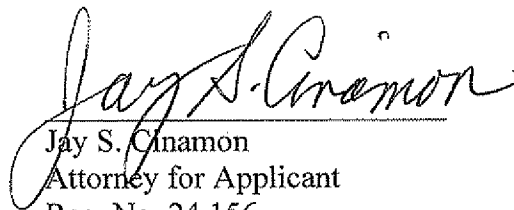
The issuance of a Notice of Allowance is in order and is respectfully solicited.

Please charge any fees which may be due to our Deposit Account No. 01-0035.

Respectfully submitted,

ABELMAN, FRAYNE & SCHWAB  
Attorneys for Applicant

By

  
Jay S. Cinamon  
Attorney for Applicant  
Reg. No. 24,156

666 Third Avenue  
New York, NY 10017-5621  
Tel.: (212) 949-9022  
Fax: (212) 949-9190